

REMARKS

Claims 1, 4, 6, 8, 14, 16, and 17 have been amended. Support for the amendments to the claims may be found throughout the specification. Claims 2, 3, 7, 9-11, 18, and 22 have been canceled without disclaimer of the subject matter contained therein or prejudice to Applicants' right to file any continuing applications directed thereto. Claims 24-27 have been added. Independent claim 24 is essentially original claim 4 rewritten into independent form. No new matter has been added. Upon entry of this Amendment, claims 1, 4-6, 8, 12-17, 19-21, and 23-27 are pending. Reconsideration and allowance of the pending claims are respectfully requested.

In the Office Action dated March 15, 2007, claims 1, 7, 13-16, and 18 were rejected under 35 U.S.C. §102(e) as being anticipated by De Smit et al. Applicants respectfully traverse this rejection.

Independent claim 1 recites a method of fabricating a device using a lithographic apparatus process. As recited by claim 1, the method includes, *inter alia*, "applying a first layer of conductive material to an upper surface of a resist layer on a substrate; providing a second layer of conductive material on a lower surface of the resist layer, between the resist layer and the substrate;" and "applying an electric field across the resist layer by applying a potential difference between the two conducting layers, the direction of the field being substantially perpendicular to a plane of the resist layer during the exposing." De Smit et al. does not disclose, teach, or suggest all of the features of claim 1.

De Smit et al. teaches bubble removal means for removing bubbles attached to any interfaces within the immersion liquid, such as a surface of the substrate. *See* De Smit et al. at [0108]. In the embodiment cited in the Office Action, and described at [0108], two electrodes 27a and 27b are arranged in the region between the final element of the projection system and the substrate. *See* De Smit et al. at [0108]. The electrodes 27a and 27b of De Smit et al. are not provided on an upper surface of a resist layer and a lower surface of the resist layer. *See* De Smit et al. at FIG. 9. De Smit et al. does not disclose, teach, or suggest applying a first layer of conductive material to an upper surface of a resist layer on a substrate, providing a second layer of conductive material on a lower surface of the resist layer, and applying an electric field across the resist layer by applying a potential difference between the two conducting layers, as recited by claim 1.

In view of the foregoing, Applicants respectfully submit that claim 1 and the claims that depend from claim 1, and include additional advantageous features, are patentable over De Smit et al., and respectfully request that the rejection of claims 1 and 13 be withdrawn.

Independent claim 14 recited a lithographic apparatus that includes, *inter alia*, “an electric field generator configured and arranged to apply a potential difference between a layer of conductive material on an upper surface of the resist layer and a layer of conductive material on a lower surface of the resist layer, between the resist layer and the substrate, the direction of said field being substantially perpendicular to the plane of the resist layer.” De Smit et al. does not disclose, teach, or suggest each and every feature of claim 14.

De Smit et al. is discussed above. The electrodes of De Smit et al. are not layers of conductive material on an upper surface and a lower surface of a resist layer of a substrate. As such, De Smit et al. does not disclose, teach, or suggest a lithographic apparatus that includes an electric field generator configured and arranged to apply a potential difference between a layer of conductive material on an upper surface of the resist layer and a layer of conductive material on a lower surface of the resist layer, as recited by claim 14.

In view of the foregoing, Applicants respectfully submit that claim 14 is patentable over De Smit et al., and respectfully request that the rejection of claim 14 be withdrawn.

Independent claim 15 recites a method of fabricating a device using a lithographic process that includes, *inter alia*, “applying a radiation sensitive resist on top of the device, the resist material incorporating a conductive material.” The cited portions of De Smit et al. do not disclose, teach, or suggest that the resist material incorporates a conductive material. Contrary to the assertion in the Office Action, *see* page 2, the electrodes are not resist material.

In view of the foregoing, Applicants respectfully submit that claim 15 is patentable over De Smit et al., and respectfully request that the rejection of claim 15 be withdrawn.

Independent claim 16 recites a method of processing a device using a lithographic process that includes “exposing the conductive resist material to UV radiation while applying an electric field across the resist material by directly coupling the conductive resist material to a fixed potential.” As discussed above, the cited portions of De Smit et al. do not disclose, teach, or suggest that the resist material incorporates a conductive material. Moreover, De Smit et al. does not disclose, teach, or suggest applying an electric field across the resist material by directly coupling the conductive resist material to a fixed potential, as recited by claim 16.

In view of the foregoing, Applicants respectfully submit that claim 16 is patentable over De Smit et al., and respectfully request that the rejection to claim 16 be withdrawn.

In the Office Action, claims 1-3, 10, and 12-23 were rejected under 35 U.S.C. §102(e) as being anticipated by Bristol et al. (U.S. Patent Application Publication No. 2005/0074706). Applicants respectfully traverse this rejection.

Independent claim 1 is discussed above. Bristol et al. does not disclose, teach, or suggest each and every feature of claim 1.

Bristol et al. teaches a semiconductor substrate (12) having a photoresist (10) that may be exposed to an electric field. *See* Bristol et al. at [0013]; FIG. 1. A thin layer of conductive material (14) may be applied over the resist (10), as shown in FIG. 5. *See* Bristol et al. at [0025]. Bristol et al. does not disclose, teach, or suggest providing a second layer of conductive material on a lower surface of the resist layer, between the resist layer and the substrate, and applying an electric field across the resist layer by applying a potential difference between the two conducting layers, as recited by claim 1.

In view of the foregoing, Applicants respectfully submit that claim 1 and the claims that depend from claim 1, and include additional advantageous features, are patentable over Bristol et al., and respectfully request that the rejection of claims 1, 12, and 13 be withdrawn (claims 2, 3, and 10 having been canceled).

Independent claim 14 is discussed above. Bristol et al. does not disclose, teach, or suggest a lithographic apparatus that includes, *inter alia*, “an electric field generator configured and arranged to apply a potential difference between a layer of conductive material on an upper surface of the resist layer and a layer of conductive material on a lower surface of the resist layer, between the resist layer and the substrate,” as recited by claim 14. Specifically, Bristol et al. does not disclose, teach, or suggest a layer of conductive material on a lower surface of the resist layer, between the resist and the substrate.

In view of the foregoing, Applicants respectfully submit that claim 14 and the claims that depend from claim 14, and include additional advantageous features, are patentable over Bristol et al., and respectfully request that the rejection of claims 14, 17, and 19 be withdrawn.

Independent claim 15 is discussed above. Bristol et al. does not disclose, teach, or suggest all of the features of claim 15. Specifically, Bristol et al. teaches that the resist may comprise a blend of two polymers and/or a random copolymer containing both polar and non-polar components. *See* Bristol et al. at [0014]. Bristol et al. does not disclose, teach, or suggest that such polymers are conductive.

In view of the foregoing, Applicants respectfully submit that claim 15 and the claims that depend from claim 15, and include additional advantageous features, are patentable over Bristol et al., and respectfully request that the rejection of claims 15, 20, and 21 be withdrawn.

Independent claim 16 is discussed above. Bristol et al. does not disclose, teach, or suggest a method of processing a device that includes exposing the conductive resist material to UV radiation while applying an electric field across the resist material by directly coupling the conductive resist material to a fixed potential, as recited by claim 16.

In view of the foregoing, Applicants respectfully submit that claim 16 and the claims that depend from claim 16, and include additional advantageous features, are patentable over Bristol et al., and respectfully request that the rejection to claims 16, and 23 be withdrawn.

New independent claim 24 recites a method of fabricating a device using a lithographic process. As recited by claim 24, the method includes, *inter alia*, “applying a layer of metallic conductive material to an upper surface of a resist layer on a substrate” and “applying an electric field across the resist layer, the direction of the field being substantially perpendicular to a plane of the resist layer during the exposing.”

As conceded in the Office Action at page 4, first paragraph, none of the prior art of record teaches or discloses a method of fabricating a device using a lithographic process that includes applying a layer of metallic conductive material to an upper surface of a resist layer on a substrate.

Accordingly, Applicants respectfully submit that claim 24 and the claims that depend from claim 24, and include additional advantageous features, are patentable over the prior art of record, including De Smit et al. and Bristol et al.

In the Office Action, claims 4-6, 8, 9, and 11 were objected to as being dependent upon a rejected base claim. Applicants acknowledge with appreciation the indication that these claims would be allowable if rewritten in independent form. However, in view of the foregoing, Applicants respectfully submit that all of the pending claims are allowable.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance. If questions relating to patentability remain, the Examiner is invited to contact the undersigned to discuss them.

MICKAN ET AL. -- 10/823,775  
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Should any fees be due, please charge them to our deposit account no. 03-3975, under our order no. 081468/0309171. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced deposit account.

Respectfully submitted,

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